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## J.S. Held LLC Company Background

J.S. Held is a leading consulting firm specializing in construction claims services, forensic architectural & engineering services, and environmental consulting services.


Our organization is built upon three fundamental pillars:

1. To provide high-quality technical expertise;
2. To deliver an unparalleled client experience; and
3. To be a catalyst for change in our industry.


Our Consulting & Engineering Services include:

<ul style="list-style-type: none"> <li>• Construction Claims Services</li> <li>• Property Damage Consulting</li> <li>• Builders Risk Consulting</li> <li>• Appraisals</li> <li>• Drone Services</li> <li>• Commercial Equipment Consulting</li> </ul>	<ul style="list-style-type: none"> <li>• MEP Consulting</li> <li>• Construction Defect Consulting</li> <li>• Project Scheduling &amp; Planning</li> <li>• Litigation Support</li> <li>• Expert Witness Testimony</li> <li>• Code Review</li> <li>• Origin &amp; Cause Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Mold &amp; Indoor Air Quality Consulting</li> <li>• Environmental Assessment (IH)</li> <li>• Surety Claim Services</li> <li>• Construction Management</li> <li>• Project Monitoring</li> <li>• Roof Consulting &amp; Roof Lab</li> </ul>
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## Presenter Introductions



**Andrew Lonergan**  
Vice President – Construction  
Advisory Practice Group

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## Construction Risks

Presented to:

UCIP Risk Management Workshop

Presented by J.S. Held LLC

Andrew Lonergan  
*Vice President | Construction Advisory*

October 23, 2019

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## Today's Learning Objectives

1. What are the Risks
  2. Shifting of Risk = Claims
  3. Builders Risk Specifics
  4. Documents
  5. Claim Costs
  6. Claimed Time
- Q & A

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## Part 1

### What Are the Risks

“Who is responsible?”

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## Construction Risks

- Accidents
- Force Majeure
- Unforeseen Conditions / Errors & Omissions
- Contractor Delays or Defaults / Errors in the Work



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## Construction Risk Response

### Accidents

- Builders Risk Claim- Time & Money for Multiple Parties

### Force Majeure

- Excusable & Non-Compensable Change Order- Time to Contractor with no Money paid by Owner



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## Construction Risk Response

Unforeseen Conditions / Errors & Omissions

- Excusable & Compensable Change Order – Time to Contractor & Money paid by Owner

Contractor Delays or Defaults / Errors in the Work

- Non-Excusable & Non-Compensable, No Change Order- No time or Money given by Owner, possible collection of LD's with proper Notice.



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## Part 2

Shifting of Risk = Claims

“This is not what I signed up for....”

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## Shifting of Risk = Claims

Impossible to predict all types of claims

- Delays-Compensable & Non-Compensable
- Changes- Unforeseen, Disputed
- Manpower Issues
- Material Issues
- Defective work
- Accidents

**The Risk does not go away, it changes hands. Documentation helps prove Entitlement and support Damages**



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## Conditions Which Can Lead to Time Impact Claims

- Extended period of performance (E.P.P.)
- Disruption (can lead to E.P.P.)
- Acceleration (can flow from disruption and (maybe) lack of E.P.P.)



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## Delay Claim

Impact to critical path (actually delayed project)


- There was timely and proper notice given
- Impact and delay was not concurrent with other impacts
- There is a link to damages claimed



Schedule Driven Analysis  
(As-Plan vs As Built / TIA / But-For)

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## Acceleration Claim

Despite a delay, you must finish on time

- Owner/GC refusal to grant time extension
- Express or implied order of Owner/GC to perform to schedule
- Contractor/Sub efforts to speed up work resulting in extra costs
- Schedule Driven Analysis

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## Loss of Productivity Claims

Project Conditions- We could not complete the work the way we intended to do it

- Environmental
- Sequencing changes
- Labor assignments
- Timing
- Related to “accelerated conditions” (trade stacking, concurrency, etc.)

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## Methods for Loss of Productivity Claims

LOP claims are made for activities where additional costs were incurred.

The process is often a backing into the loss

Methods:

- Total Cost Method (TCM)
- Modified Total Cost (MTC)
- Estimate based upon causal factor impact - MCAA
- Earned Value Analysis
  - Stand alone for discrete activities AND/OR
  - Substantiate MTC
- Measured Mile
  - Stand alone for discrete activities AND/OR
  - Substantiate MTC
  - Data Driven Analysis, Schedule Supported



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## Defenses are:

- Notice and waiver
- Accord and Satisfaction
- Exculpatory and limiting clauses
  
- No causation shown - correlation does not = causation
- No mitigation efforts
- Bid errors – material errors?

**No link between causal factors shown to be responsibility of other party and damages of claiming party**

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## Part 3

### Loss Basics & Coverage Issues –

“What do you mean I didn’t buy that coverage?”

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## Builder's Risk Is Unique

- Coverage is for properties in the course of construction or renovation
- Coverage Amount is based on a concept that may change during construction
- Any delays must be due to a covered cause of loss



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## Typical Coverage Issues – Is It Covered?

- Usually Covered - Property intended to become a "permanent" part of the structure
- Potentially Covered - Land and Water, but only to the extent that they are "consequentially" involved in the project such as excavations
- Usually Not Covered – Equipment, materials, and systems used in the construction of the project which are temporary or can not be re-used:
  - *Formwork*
  - *Cranes & Equipment*

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## Additional Coverage

Policies will often provide extra expense and expediting expense coverage:

- Extra Expense – costs associated with the impact of a loss on the contractors non loss related (base contract) work
- Expediting Expense – Expediting base contract work (non loss related repairs) and/or Expediting loss related repairs



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## Time Element Coverage

Soft Cost Coverage for a “delay” caused by a covered cause of loss usually includes:

- Interest on Construction Financing
- Additional Real Estate Taxes
- Additional Marketing and Leasing Expenses
- Additional Architect and Engineering Costs
- Additional Administrative Costs
- Additional Legal and Accounting
- Deductible is typically a “waiting period”



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## Measuring Time Element Claims

Measurement requires determining two important dates:

- The date the project would have completed had no loss occurred.
- The amount of delay caused by the loss.

Losses are typically measured by measuring the period of delay, less any waiting period.



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## Time Element Coverage Trigger

- Coverage is only afforded if a covered loss results in a delay (must have physical damage).
- The “delay” is not measured by the time it would take to make repairs. Delay is the time the project completion is extended beyond the date it would have completed had the loss not occurred.
- The period of indemnity commences on the date that the project would have completed had no loss occurred - therefore the “period of restoration” for physical damage and period of delay for time element losses “rarely” run concurrently.
- In other words: **Period of Repair ≠ Period of Delay**

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## Typical Disputes

- Cost of repair – labor, material, productivity, overhead, profit, and other fees
- What is P.D. versus Non-P.D. expense?
- Establishing the date the project would have completed had no loss occurred
- The period of loss related delay



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## Early Involvement in Loss Projects Allows Us to:

- Set expectations regarding delay analysis, document requirements, and the claim review
- Photograph the progress of the project at time of loss, which will allow us to determine if project was on schedule
- Document and reach mutual agreement on scope of loss, then allows us to track the progress of repairs
- Review potential for mitigation or acceleration (i.e. can we spend \$10,000 to save \$20,000?)

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## Early Loss Project Inspection:

- Inspect loss related damage and areas, **but also**.....
- Inspect non-loss related areas for:
  - Status of overall project
  - Progress of work in non-loss areas of the project
  - Preparation for potential delay claim



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## Part 4

### Documents

“Why do you need all of this stuff?”

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## Documents – Tell the story

### Proof of Actual Performance-

- Daily Reports, Meeting Minutes, Correspondence, & Inspection Reports
- Contracts & Subcontracts
- Schedule and sequence- CPM, Pull Mtgs, 3-Week LA
  - Are they accurate?
- Pay Applications, Estimates (Unit prices, Labor productivity ,Detailed take-offs)

We use these documents to put together the status of the project in order to validate or dispute the claim.

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## Documents – Cost Verification

### Proof of Damages

- Detailed Job Cost Transaction Report- Coding is critical
- General conditions
- Payroll information: Lost Production = Actual Costs Spent
- Change Orders- Accord & Satisfaction/ Double Dipping

We use these documents to verify Overhead and Profit Markups, Staff/Personnel Rates, Values of Work, Unit Prices Labor Rates, Material Cost, Equipment Costs.

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## Daily Construction Reports

- Knowledgeable person (sign)...contemporaneous
- Describe what happened, where, with whom
- Describe what it was like (environmental conditions as well as general work conditions for each area)
- Describe what was supposed to happen and could not
- Impacts to certain activities
- Identify why an activity that was started but not worked on (and possibly why)
- Changed or possible changes worked on with all of the above described



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Date Tue 04/30/2019		Job # 28618C		Prepared By																																																																												
<div> <div> <div>45°</div> <div>SUN AM</div> <div>Clear</div> </div> <div> <div>60°</div> <div>12:00 PM</div> <div>Partly Cloudy</div> </div> <div> <div>58°</div> <div>4:00 PM</div> <div>Clear</div> </div> </div> <div> Wind 5 MPH   Precipitation 0"   Humidity 74%         Wind 5 MPH   Precipitation 0"   Humidity 65%         Wind 10 MPH   Precipitation 0"   Humidity 65%       </div>																																																																																
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## Meeting Minutes

- Prompt preparation and review; respond back in writing if any misunderstandings
- Use other documentation tools (logs and schedules) to run meetings and document meeting proceedings
- Identify action requirement (who and date) and why
- Keep factual
- Use as notice but don't rely upon too heavily for cost or time events
- Request knowledge of Impacts or Disruptions



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MEETING MINUTES																																																			
<b>Meeting Subject:</b> OAC Meeting <b>Meeting Date:</b> Tuesday, April 30, 2019 10:00 AM																																																			
<b>Project #:</b> <b>Project Name:</b> <b>Project Address:</b>		<b>Meeting #:</b> 055 <b>Meeting Track:</b> Owner Meeting Minutes <b>Meeting Location:</b>																																																	
<b>Attendees</b> <table border="1"> <thead> <tr> <th>Attendee</th> <th>Company</th> <th>Notes</th> <th>Attendee</th> <th>Company</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td>X Dave</td><td></td><td></td><td>David</td><td></td><td></td></tr> <tr><td>X Troy</td><td></td><td></td><td>Erik B</td><td></td><td></td></tr> <tr><td>X Walt</td><td></td><td></td><td>Miguel</td><td></td><td></td></tr> <tr><td>X Dan</td><td></td><td></td><td>Mark</td><td></td><td></td></tr> <tr><td>X Drew</td><td></td><td></td><td>Taylor</td><td></td><td></td></tr> <tr><td>X Mike</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>X Cam</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>				Attendee	Company	Notes	Attendee	Company	Notes	X Dave			David			X Troy			Erik B			X Walt			Miguel			X Dan			Mark			X Drew			Taylor			X Mike						X Cam					
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<b>Acceptance/Exceptions of Meeting Minutes</b> The above meeting minutes constitute our understanding of the topics discussed and directives given. These meeting minutes are hereby submitted to the Owner's Representatives for formal review and acceptance. Please review these meeting minutes for accuracy. It will be assumed that the meeting minutes are accepted unless you provide written exceptions to The Heenan Company within 3 days of receipt.																																																			
<b>Meeting Agenda</b> <table border="1"> <thead> <tr> <th>Item ID</th> <th>Description and Notes</th> <th>Responsibility</th> <th>Due Date</th> </tr> </thead> <tbody> <tr> <td>26.000.20.110.05</td> <td>Agenda</td> <td></td> <td></td> </tr> <tr> <td>26.000.20.110.06</td> <td>Schedule</td> <td></td> <td></td> </tr> </tbody> </table>				Item ID	Description and Notes	Responsibility	Due Date	26.000.20.110.05	Agenda			26.000.20.110.06	Schedule																																						
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<b>Meeting Track Code:</b> OWNER <b>Project Code:</b> 3163A																																																			
Page 1 of 4																																																			

Item ID	Description and Notes	Responsibility	Due Date
042002019	Front entry Metal panels shipment date pushed back to mid May, exact date TBD  Interior: Final inspections are scheduled for next week 5/08 Painting & glazing on going Entry lobby tracking to complete by 5/10  Exterior: Parking area sub-grade needs additional day to complete, weather permitting Painting of doors are set for 5/15 & 5/16 Exterior painting in progress, complete on the north and moving around the east & south Landscaping will begin after the parking is complete & will not be complete by 5/15 Owners understand and agree on the sequencing		
26.000.33	Bedroom wall tile base		
046002019	Open The Schluter cover for installed by MVT is not acceptable. [redacted] will work with MVT to provide an acceptable solution.		
042002019	MVT will replace the base tile with core base, removing the existing base tile Schedule will need to be coordinated with Mathews & is TBD		
26.000.35	Pricing and additional work		
031202019	Open Dan to provide Contingency Log update, Mathews pricing & OIL update by end of week		
046002019	Owner CDS change order 004 revision will be reviewed and finalized by end of the week, 4/12		
042002019	Owners provided associated OOO, 04 & 05		
26.000.40	Basement demo & equipment consolidation		
046002019	Open Dan, Dave and Troy will meet today with all the subs		
046002019	The basement scope meeting held on 4/02, provided coordination for the remaining work  Kubodol will remove the branch fire protection heads around the ductwork that will be removed and use the existing main system near the ceiling to provide the code required coverage in the basement.  A crown area below the Mathews area identified that may need closed with gypboard to allow the basement fire protection to function correctly. Other ceiling issues may need to be addressed, and will be looked at once the ducts are removed over the next week or two.  Bert's will look at removing the fire alarm boxes if it can be done without affecting the overall alarm system. They will also coordinate their electrical panel & sub-panel consolidation as agreed. Additional coordination with Owner & Bradach will continue & is important for safety.  HVAC & Plumbing did not have any additional work at this time.		
042002019	Wait provided a code review confirming that 2 story shafts must be 1 hour rated & 2 hour shafts are ok		

<b>Meeting Track Code:</b> OWNER <b>Project Code:</b> 3163A			
Page 2 of 4			

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## Correspondence

- What counts as Correspondence?
  - Letters, Email, Text, Photos, Spreadsheets
- Establish outgoing protocol and ingoing protocol (by or to whom, what, filing, dating, numbering, etc.)
- If NOTICE, understand technical requirements
- Short and to the point

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## Correspondence

- Clear & Simple
- Specific
- Timely
- Consistent with contract requirements
  - Be aware of contract terms
- Don't Sound like a lawyer
- Objective & Factual - Keep emotions out
- How will it read 3 years from now?
- Solution Focused-Proactive
- Close the loop - Don't leave anything hanging!

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## Project Schedule Basics

### Project Schedule:

- The plan for construction of the project which is typically created by the construction manager or general contractor, and which depicts the sequence and duration of construction activities, typically in Bar Chart or "Gantt" chart format

### Critical Path:

- The longest continuous chain of activities which establishes the minimum overall project duration

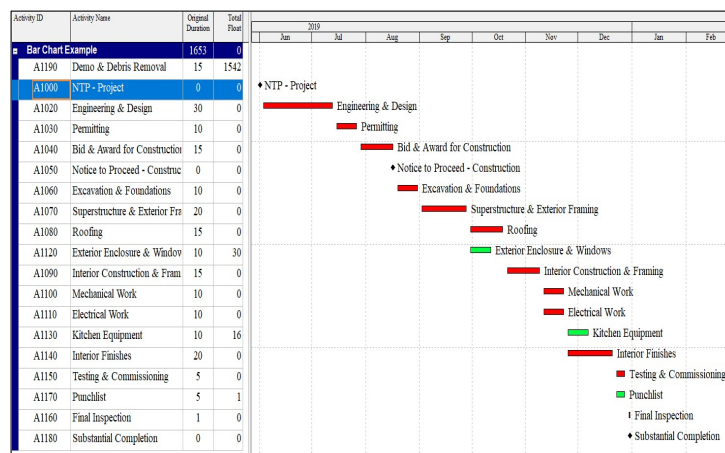
### Total Float:

- The amount of time that an activity can be delayed from its early start date without delaying the project finish date

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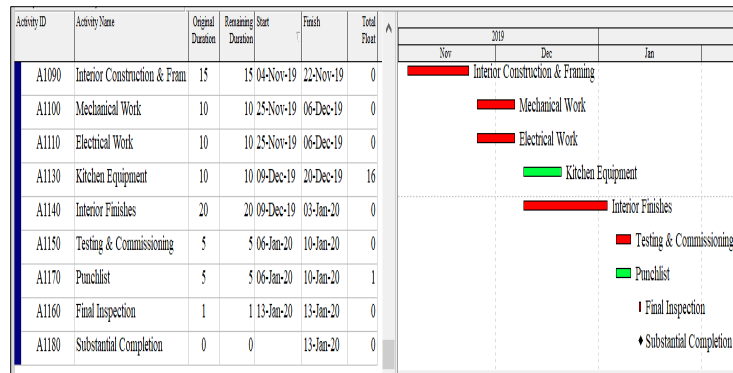
## Bar Chart ("Gantt" Chart) & Critical Path



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## Activity Float



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## Basics of Scheduling

- A project schedule should represent the contractors plan to successfully achieve the project goals, i.e. complete the project “on time and on budget”
- Contractors will typically update the schedule at least monthly;
- Schedules include “logic” – relationships between the work activities in order to reflect the sequence of work

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## Basics of Scheduling

Contractors are expected to re-sequence activities to overcome or at least minimize delays from events such as losses that can arise on any construction project.

**But... Stuff Happens... So...**

Contractors typically:

- Adequately plan the project
- Execute the plan
- Monitor the plan
- Adjust the plan for actual conditions
- Re-plan the plan



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## How Schedules Are Developed

- List of activities that can be measured
- Durations are calculated, not guessed:

$$\frac{\text{QUANTITY}}{\text{PRODUCTIVITY}} = \text{DURATION}$$

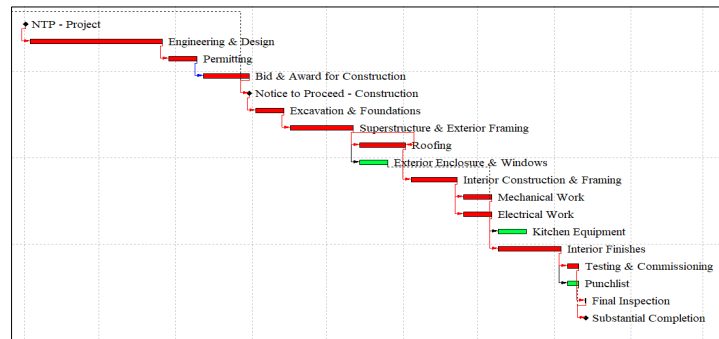
- Logical sequence of activities –  
Predecessors & Successors

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## Activities & Logic

Each activity in the schedule is connected by logic ties called Predecessors and Successors:



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## Document Review

“That’s a lot to keep up with.”

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## Impact/Change Events

- Have a system of documentation collection
- Require and follow through with notice requirements
- Collect as much data regarding labor, equipment and materials
- Be aware of and sensitive to contractors documentation (external and internal) and notice of [potential] change events
- Track Contractors & Subcontractors Labor and Performance
- Keep logs and use in meetings
- Reference in OAC reports

Create an Issue File

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## Types Of Documents

- |                                      |   |
|--------------------------------------|---|
| • Bid Docs/ Estimates                | • Coordination drawings   |
| • Construction schedules             | • Photographs & Video   |
| • Submittal/Procurement schedule/log | • Project Close-out documents <ul style="list-style-type: none"> <li>• Punch lists</li> </ul>   |
| • Contract Documents                 | • Inspection/QA-QC Documentation <ul style="list-style-type: none"> <li>• Engineer/Architect Field Report</li> <li>• Non-conformance Log and Reports</li> </ul> |
| • Meeting Minutes                    | • Job Cost Reports  |
| • Daily Construction Reports         | • Payment Applications  |
| • Correspondence                     | • Sub Contracts & Proposals   |
| • Important “milestone” events       |   |
| • Change event documents             |   |
| • RFIs and logs                      |   |
| • Supplier Material Logs             |   |

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## Part 5

### Claimed Costs

“How much is all this going to cost, and who’s paying for it?”

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## Valuation Issues

### Builders Risk v Non-Insured Claim

#### Builders Risk

- Coverage is usually at replacement cost
- Amount is usually determined from either original estimates or contracts
- Overhead & Profit (Markups) – Per contract terms or what is “Reasonable”?
- Markup definition – What’s included and what isn’t (jobsite overhead, home office overhead, insurance, bonds, etc.,)

#### Non-Insured Claim

- What can be proven to be necessary and reasonable

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## Delay Costs and Extended General Conditions (GC's)

### Builders Risk & Non-Insured Claim

- Only paid if a critical path delay
- What additional costs were incurred due to the loss/impact.....and what costs weren't?
- What was rate of GC expenditure at time of loss/impact (verify with pay apps or job cost documents)
- Historical/Pre-Loss/impact basis for Extended GC's – verify with pre-loss time extension change orders, contract terms



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## Extended General Conditions (GC's)

Row Labels	Grand Total	Non-Labor Subtotal	Non-Mgt Labor Only Subtotal
01-013 Misc Office Supplies	\$2,375.93	\$2,375.93	
01-019 Temp Heat	\$31,154.12	\$31,154.12	
01-020 Trucking/Mileage	\$15,156.12	\$15,156.12	
01-021 Cell Phone/Internet	\$8,097.67	\$8,097.67	
01-023 Small Tools	\$12,372.80	\$12,372.80	
01-030 Rent Adjacent Lot	\$37,240.34	\$37,240.34	
01-500 Temp Utilities	\$59,622.47	\$59,622.47	
01-520 Job Office	\$18,541.10	\$18,541.10	
01-521 Storage Units	\$0.00	\$0.00	
01-540 Safety/OSHA	\$17,476.63	\$17,476.63	
01-561 Dumpsters	\$0.00	\$0.00	
01-562 Portable Toilets	\$33,994.49	\$33,994.49	
01-920 Site Labor (Reduced by \$7000 from CO#5)	\$103,586.16		\$103,586.16
01-930 Misc GC Items (\$2,500/mo Allow)	\$65,000.00	\$65,000.00	
Refund of Temp Heat-Amerigas	-\$1,545.90	-\$1,545.90	
<b>Grand Total</b>	<b>\$403,071.93</b>	<b>\$299,485.77</b>	<b>\$103,586.16</b>
Start thru Jan 2019 (6/1/16-7/24/18=784 cd)		784	
Sub-Total Daily Rate GC's		\$382.00	\$132.13
Total Daily Rate GC's			\$514.12
Daily Rate GC's			\$514.12
Avg. Rate for Staff Labor During Impact Period			\$1,910.22
<b>Total GC &amp; Staff Labor Daily Rate</b>			<b>\$2,424.34</b>

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## Claim Cost Analysis and Issues

- Delay costs disguised as direct repair costs
- Acceleration/overtime for base contract work – Premium Time only
- Lack of documentation provided or maintained
- Inefficiency/Lost Productivity Claims
  - Difficult to prove and substantiate
  - Supporting Documents – actual productivities (“Measured Mile”)



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## Calculation of Labor Cost

Month	Production Period	Wages	Benefits	Taxes & Fees	Total Labor	Sum Prod. Period	Start	Finish	CD	\$/CD	\$/MO
Jun-16	Earthwork & Concrete	\$ 12,263.10	\$ 2,087.99	\$ 769.68	\$ 15,120.77						
Jul-16	Earthwork & Concrete	\$ 10,263.10	\$ 1,911.28	\$ 581.30	\$ 12,755.68						
Aug-16	Earthwork & Concrete	\$ 14,193.10	\$ 2,588.96	\$ 682.48	\$ 17,464.44						
Sep-16	Earthwork & Concrete	\$ 25,174.05	\$ 1,899.48	\$ 2,009.93	\$ 29,173.46						
Oct-16	Earthwork & Concrete	\$ 29,802.96	\$ 5,735.23	\$ 1,862.46	\$ 37,400.65						
Nov-16	Earthwork & Concrete	\$ 34,071.21	\$ 4,773.20	\$ 1,803.40	\$ 40,647.81						
Dec-16	Earthwork & Concrete	\$ 32,703.21	\$ 5,619.22	\$ 1,922.08	\$ 40,244.51						
Jan-17	Production Construction	\$ 34,825.35	\$ 4,501.49	\$ 3,000.15	\$ 42,326.99						
Feb-17	Production Construction	\$ 38,333.24	\$ 5,997.60	\$ 2,362.12	\$ 46,692.96						
Mar-17	Production Construction	\$ 56,517.86	\$ 6,997.07	\$ 5,379.97	\$ 68,894.90						
Apr-17	Production Construction	\$ 38,457.49	\$ 6,030.77	\$ 2,158.75	\$ 46,647.01						
May-17	Production Construction	\$ 37,688.12	\$ 5,555.37	\$ 2,205.70	\$ 45,449.19						
Jun-17	Production Construction	\$ 41,867.49	\$ 6,365.33	\$ 2,548.39	\$ 50,581.21						
Jul-17	Production Construction	\$ 33,899.82	\$ 4,820.60	\$ 2,533.54	\$ 41,253.96						
Aug-17	Production Construction	\$ 34,614.74	\$ 5,332.10	\$ 2,067.43	\$ 42,014.27						
Sep-17	Production Construction	\$ 48,229.36	\$ 7,429.31	\$ 2,880.80	\$ 58,539.27						
Oct-17	Production Construction	\$ 32,843.99	\$ 4,952.60	\$ 2,090.30	\$ 39,886.89						
Nov-17	Production Construction	\$ 38,206.12	\$ 5,762.56	\$ 2,432.17	\$ 46,400.85						
Dec-17	Production Construction	\$ 38,622.49	\$ 5,532.48	\$ 2,981.43	\$ 47,136.40						
Jan-18	Production Construction	\$ 42,810.39	\$ 6,470.47	\$ 3,552.58	\$ 52,833.42						
Feb-18	Production Construction	\$ 44,418.84	\$ 6,849.49	\$ 3,362.92	\$ 54,590.89						
Mar-18	Production Construction	\$ 47,261.56	\$ 9,060.58	\$ 5,491.60	\$ 61,813.74						
Apr-18	Production Construction	\$ 48,235.37	\$ 10,469.72	\$ 4,362.32	\$ 63,067.41						
May-18	Production Construction	\$ 45,735.04	\$ 9,525.16	\$ 4,356.40	\$ 59,616.60						
Jun-18	Production Construction	\$ 47,707.29	\$ 6,067.80	\$ 3,419.41	\$ 57,194.50						
Jul-18	Production Construction	\$ 50,161.29	\$ 6,624.54	\$ 3,674.15	\$ 60,459.98						
Aug-18	Production Construction	\$ 44,357.18	\$ 5,086.48	\$ 3,267.89	\$ 52,711.55						
Sep-18	Production Construction	\$ 5,000.00	\$ 4,841.49	\$ 2,237.72	\$ 11,599.21						
Oct-18	Closure	\$ 5,000.00	\$ 691.46	\$ 383.08	\$ 6,014.54						
Nov-18	Closure	\$ 5,000.00	\$ 692.82	\$ 388.13	\$ 6,060.95						
Avg		\$ 34,540.44	\$ 5,325.09	\$ 2,564.94	\$ 42,430.47						
Ttl					\$ 1,272,914.14						

Average Rate During Earthwork & Concrete					
Sum Prod. Period	192,807.32	Start	6/1/2016	Finish	12/31/2016
CD	214	\$/CD	\$ 900.97	\$/MO	\$ 27,407.47

Average Rate During Period of Impact					
Sum Prod. Period	529,714.53	Start	12/1/2017	Finish	8/30/2018
CD	273	\$/CD	\$ 1,940.35	\$/MO	\$ 59,025.33
Reduction for Direct Cost (CO#5)					
Sum Prod. Period	521,489.53	Start	12/1/2017	Finish	8/30/2018
CD	273	\$/CD	\$ 1,910.22	\$/MO	\$ 58,108.83

Average Rate During Production Period					
Sum Prod. Period	1,068,031.33	Start	1/1/2017	Finish	9/30/2018
CD	638	\$/CD	\$ 1,674.09	\$/MO	\$ 50,924.00

Average Rate During Closeout Period					
Sum Prod. Period	12,075.49	Start	10/1/2018	Finish	1/31/2019
CD	123	\$/CD	\$ 98.17	\$/MO	\$ 2,986.47

Total Average Daily Rate					
Sum Prod. Period	30.42	\$/CD	\$ 1,394.97	\$/MO	

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## Part 6

### Time Element Analysis

“How long will this take?”

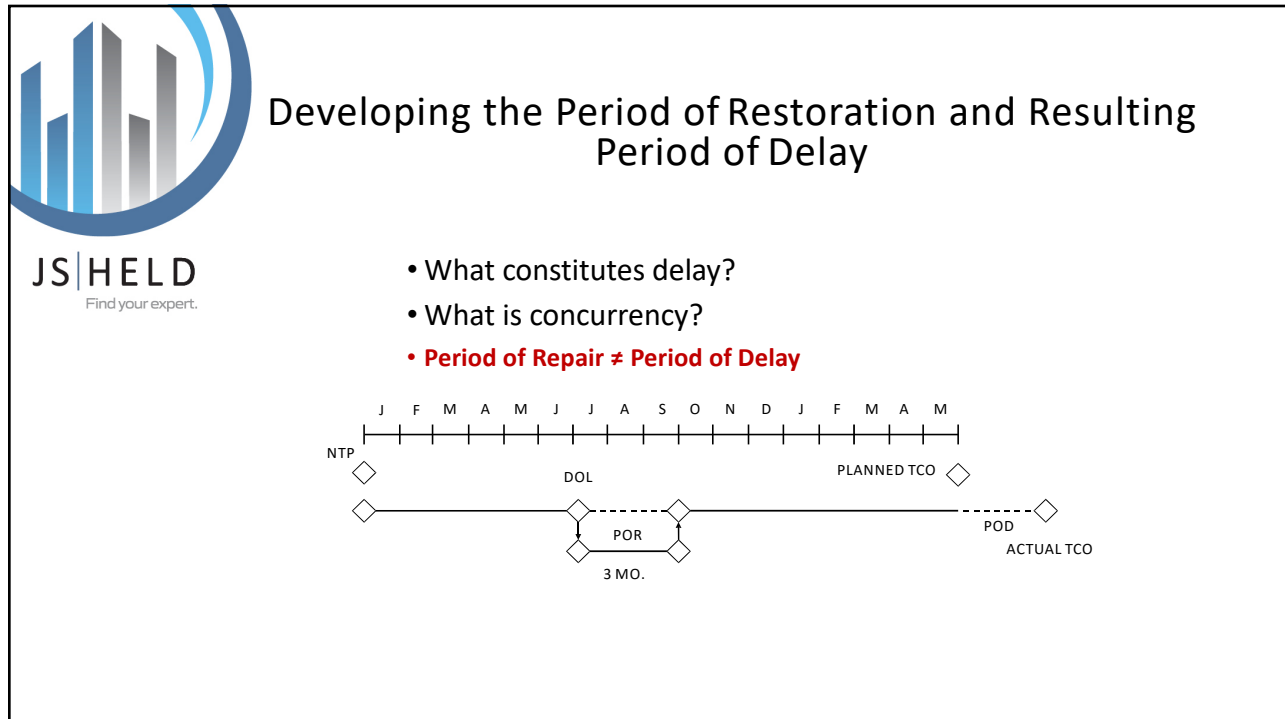
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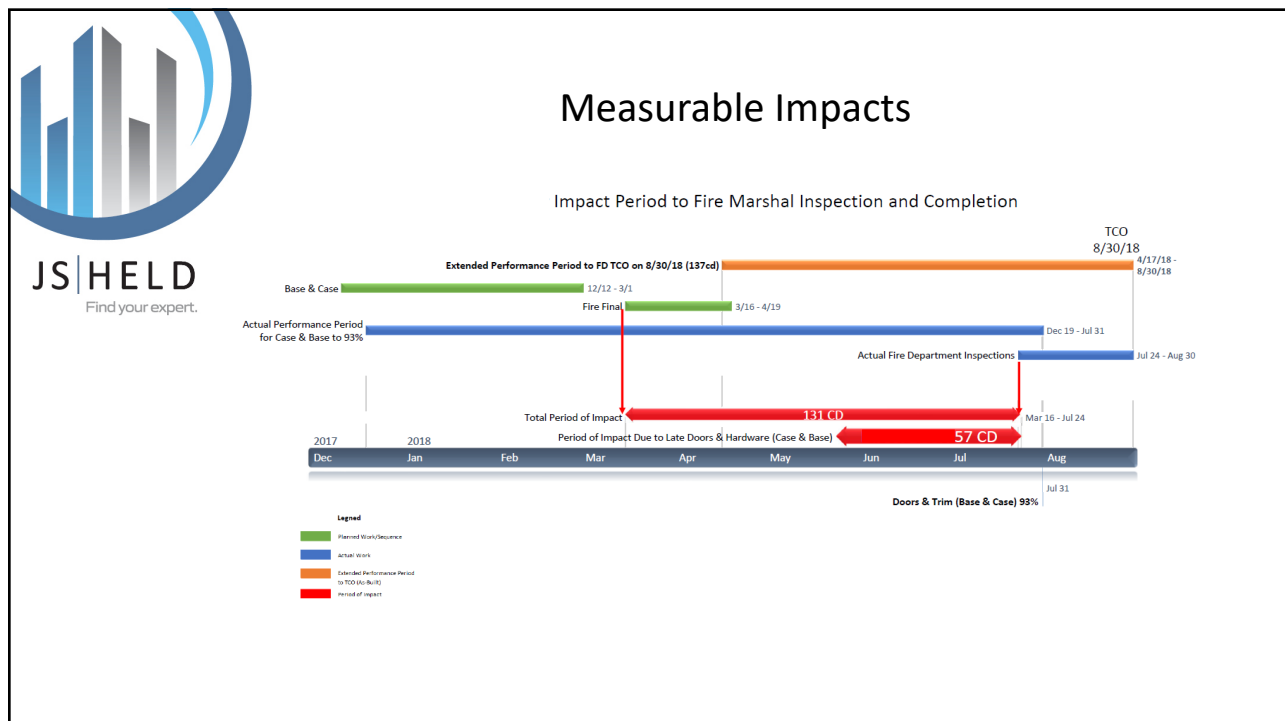
### Analyzing a Schedule

- PDF schedules vs. electronic schedules – “We need native files!!!”
- Month-to-Month progress and completion date
- Logical and Reasonable Critical Path
- Activities with Constraints
- Activities without Predecessors & Successors
- Planned vs Actual activity durations
- Owner change orders affecting the schedule

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## Takeaways

- Risks do not go away- transferred between parties.
- Claims arise when one party believes it was required to bear the results of a risk it did not agree to accept.
- Claims come in many “flavors”- understand them and how to defend against them.
- Action and Documentation help tell the story and identify the responsible parties.
- Contract requirements help tighten the proof necessary to prove a claim.

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## Questions and Discussion



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